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Synthesis of mixed-linked xylans for enzyme characterization

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The study of plant cell wall polysaccharides and their corresponding interactions with proteins is vital to get new insights into plant development [1]. Moreover, these polysaccharides are of interest in biotechnological research, due to their use in numerous industrial applications such as food, health care and sustainable biofuel production. A major class of hemicellulose is arabinoxylan that is an important polysaccharide component of lignocellulosic biomass [2]. To underpin the full commercial exploitation of these glycan polymers, it is necessary to learn more about the enzymatic hydrolysis of arabinoxylans. This can be achieved by chemical synthesis of well-defined oligosaccharides as models for the more complex macromolecules. Moreover, the utilization of enzyme resistant substrates can support the mapping of the active site of glycosyl-hydrolases.

The talk will highlight the synthesis of mixed *O*- and *S*-linked tetraxylans (figure 1) as possible interesting candidates for the investigation and characterization of arabinoxylan degrading enzymes [3].

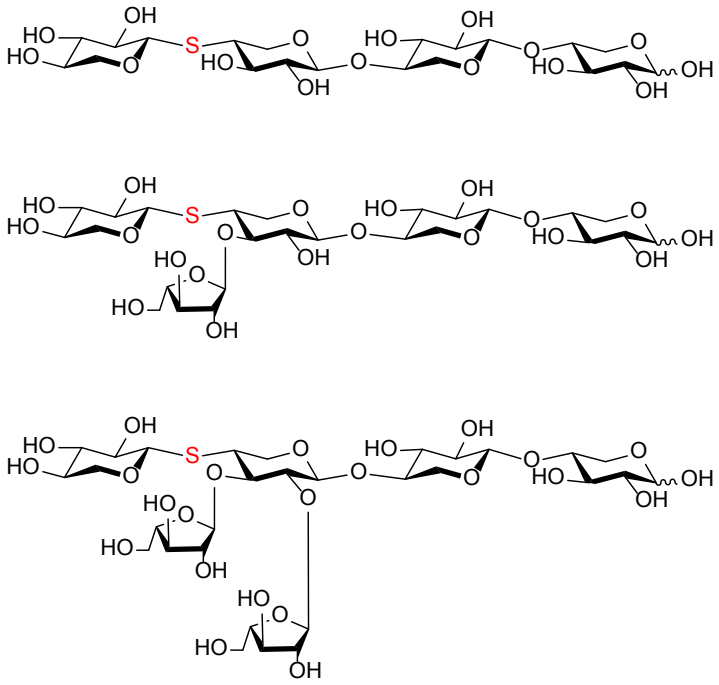

Figure 1. Target structures

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[3] B. Bonora, I. Boos, M. H. Clausen, Convergent strategy for the synthesis of S-linked oligoxylans, submitted to *Carbohydr. Res.*

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